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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,199	08/18/2003	Kazuhiro Wada	02860.0702-01	1120
22852	7590	09/21/2004	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 1300 I STREET, NW WASHINGTON, DC 20005			HASAN, MOHAMMED A	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/642,199

Applicant(s)

WADA ET AL.

Examiner

Mohammed Hasan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 54 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28, 30, 32, 33, 43 - 48, 52 - 54 is/are allowed.
- 6) ☒ Claim(s) 1 - 3, 6 - 8, 10, 12 - 17, 27, 29, 31, 34, 49 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 9, 11, 18 - 26, 35 - 42, 50, 51 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/050,560.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/2/2003</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 10/050,560, filed on January 18, 2002.

Oath/Declaration

2. Oath and declaration filed on 8/18/2003 is accepted.

Information Disclosure Statement

3. The prior art documents submitted by applicant in the Information Disclosure Statement filed on 12/2/2003 have all been considered and made of record (note the attached copy of form PTO – 1449).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 3, 6 – 8, 10, 12 – 16, 27, 29 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishibai et al (5,166,830).

Regarding claim 1, Ishibai et al discloses (refer to figure 29) an objective lens for use in an optical pickup apparatus comprising: a first lens (L1') molded with a plastic and having an optically function section, a flange section (35) provided around the periphery of the optically functional section, and a first contacting section provided on the flange section, and a second lens (L2') molded with a plastic, located opposite to the first lens and having an optically function section, a flange section (35) provided around the periphery of the optically functional section , and a second contacting section provided on the flange section, wherein the first lens and the second lens are jointed in such a way that the first contacting section and the second contacting section are brought in contact with each other, wherein the first lens (L1') has a first surface and a second surface and the second lens has a third surface and fourth surface as an optically functional surface, and wherein when the objective lens has an object side and an image side, the first surface, the second surface, the third surface and fourth surface are arranged in this order from the object side and the first surface and the third surface are a convex surface respectively and wherein an outer diameter of the second lens (L2') is smaller than that of the first lens (L1') (column 10, lines 30 – 37).

Regarding claim 2, Ishibai et al discloses (refer to figure 1) wherein the first contacting surface is provided on a flange section (35) provided on a flange section provided around the periphery of the second surface and is protruded toward the image side in the optical axis direction from a position of the second surface and the second

contacting surface is provided on a flange section provided around the periphery of the third surface and is protruded toward the object side in the optical axis direction (column 3, lines 35 – 66, column 10, lines 30 - 37).

Regarding claim 3, Ishibai et al discloses (refer to figure 1) the first contacting section and the second contacting section are brought in contact with each other so that the first lens holds the second lens (e.g., flange 35 is a contacting section of the first lens and the second lens).

Regarding claim 6, Ishibai et al discloses (refer to figure 1) the first contacting section and the second contacting section are brought in contact with each other so that relatively positioning in the optical axis direction between the first lens (L1) and the second lens (L2) is determined .

Regarding claim 7, Ishibai et al discloses, the first contacting surface has a first perpendicular surface perpendicular to the optical axis and the second contacting surface has a second perpendicular surface perpendicular to the optical axis and wherein the first perpendicular surface and the second perpendicular surface are brought in contact with each other so that relatively positioning in the optical axis direction between the first lens and the second lens is determined (as shown in figure 1).

Regarding claim 8, Ishibai et al discloses (refer to figure 1) the first contacting section and the second contacting section are brought in contact with each other so that relatively positioning in a direction perpendicular to the optical axis between the first lens (L1) and the second lens (L2) is determined.

Regarding claim 10, Ishibai et al discloses (refer to figure 1) the first contacting section and the second contacting section are brought in contact with each other so that relatively positioning in the optically direction and in a direction perpendicular to the optical axis between the first lens (L1) and the second lens (L2) is determined.

Regarding claim 12, Ishibai et al discloses (refer to figure 29) wherein the first contacting section and the second contacting section are brought in contact with each other so that the first lens and the second lens are engaged tightly with each other with no clearance between the first lens (L1') and the second lens (L2').

Regarding claim 13, Ishibai et al discloses (refer to figure 29) wherein the first contacting section and the second contacting section are brought in contact with each other so that the first lens and the second lens are engaged with each other with a clearance between the first lens (L1') and the second lens (L2').

Regarding claim 14, Ishibai et al discloses (refer to figure 29) wherein after the first contacting section and the second contacting section are brought in contact with each other, the first lens and the second lens are fixed.

Regarding claim 15, Ishibai et al discloses (refer to figure 1) wherein the optically functional section of the first lens and the optically functional section of the second lens are located opposite to each other and are spaced from each other.

Regarding claim 16, Ishibai discloses, wherein the diameter of the optically functional section of a lens (L2') located closest to the image side is 40% or less of the outer diameter of the lens (as shown in figure 29).

Regarding claim 27, Ishibai et al discloses (refer to figure 29) an objective lens for use in an optical pickup apparatus comprising: a first lens (L1') molded with a plastic and having an optically function section, a flange section (35) provided around the periphery of the optically functional section, and a first contacting section provided on the flange section, and a second lens (L2') molded with a plastic, located opposite to the first lens and having an optically function section, a flange section provided around the periphery of the optically functional section , and a second contacting section provided on the flange section, wherein the first lens and the second lens are jointed in such a way that the first contacting section and the second contacting section are brought in contact with each other, wherein the first lens (L1') has a first surface and a second surface and the second lens has a third surface and fourth surface as an optically functional surface, and wherein when the objective lens has an object side and an image side, the first surface, the second surface, the third surface and fourth surface are arranged in this order from the object side and the first surface and the third surface are a convex surface respectively and wherein the fourth surface is a flat surface (column 10, lines 30 – 37).

Regarding claim 29, Ishibai et al discloses (refer to figure 29) an objective lens for use in an optical pickup apparatus comprising: a first lens molded with a first lens (L1') molded with a plastic and having an optically function section, a flange section (35) provided around the periphery of the optically functional section, and a first contacting section provided on the flange section, and a second lens (L2') molded with a plastic, located opposite to the first lens and having an optically function section, a flange

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section (35) provided around the periphery of the optically functional section , and a second contacting section provided on the flange section, wherein the first lens and the second lens are jointed in such a way that the first contacting section and the second contacting section are brought in contact with each other, and wherein the first contacting surface has a first parallel surface to the optical axis and the second contacting surface parallel to the optical axis and wherein the first parallel surface and the second parallel surface are brought in contact with each other so that relatively positioning in the direction perpendicular to the optical axis between the first lens and the second lens is determined (column 10, lines 30 – 37).

Regarding claim 31, Ishibai et al discloses (refer to figure 29) an objective lens for use in an optical pickup apparatus comprising: a first lens (L1') molded with a plastic and having an optically function section, a flange section (35) provided around the periphery of the optically functional section, and a first contacting section provided on the flange section, and a second lens (L2') molded with a plastic, located opposite to the first lens and having an optically function section, a flange section provided around the periphery of the optically functional section , and a second contacting section provided on the flange section, wherein the first lens and the second lens are jointed in such a way that the first contacting section and the second contacting section are brought in contact with each other and wherein the diameter of the optically functional section of a lens (L2') located closest to the image side is 40% or less of the outer diameter of the lens (column 10, lines 30 – 37).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 17 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Ishibai et al (5,166,830) in view of Miyamoto et al (5,896,234).

Regarding claim 17, as applied to claim 1, Ishibai et al discloses all of the claimed limitations except a ring shaped form on the flange section around the optically functional section. Miyamoto et al discloses (refer to figure 5) a ring shaped formed on the flange section (e.g., space ring 5) (column 2, lines 23 – 28). Within the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a ring shaped type flange section to provide in to the Ishibai an optical system for the purpose of to secure spacing between the lens elements as taught by Miyamoto et al (column 1, lines 25 – 30).

Regarding claim 34 and 49 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Ishibai et al (5,166,830) in view of Kitmura et al (6,744,568 B2).

Regarding claim 34, Ishibai et al discloses (refer to figure 29) an objective lens for use in an optical pickup apparatus comprising: a first lens (L1') molded with a plastic and having an optically function section, a flange section (35) provided around the periphery of the optically functional section, and a first contacting section provided on

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the flange section, and a second lens (L2') molded with a plastic, located opposite to the first lens and having an optically function section, a flange section (35) provided around the periphery of the optically functional section, and a second contacting section provided on the flange section, wherein the first lens and the second lens are jointed in such a way that the first contacting section and the second contacting section are brought in contact with each other, (column 10, lines 30 – 37). Ishibai discloses all of the claimed limitations except a gas flow passage to allow gas to flow a space enclosed by the optically functional section of the first lens and the optically function section of the second lens and outside of the object lens. However, Kitmura et al discloses, a gas stays in the space of an objective lens. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a gas flow in to the Ishibai an objective lens system for the purpose of higher density information to be recorded as taught by Kitmura (column 1, lines 51 – 52).

Regarding claim 49, Ishibai et al discloses (refer to figure 29) an objective lens for use in an optical pickup apparatus comprising: a first optical element (L1') having an optically functional section and a first contacting section provided on a periphery of the optically functional section, and a second optical element (L2') having an optically functional section and a first contacting section provided on a periphery of the optically functional section, wherein the first optical element and the second optical element are jointed in such a way that the first contacting section and the second contacting section are brought in contact with each other, (column 10, lines 30 – 37). Ishibai discloses all of the claimed limitations except an air flow passage to allow communicate the

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enclosure space and the outside. However, Kitmura et al discloses, a gas or air stays in the space of an objective lens. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a airflow in to the Ishibai an objective lens system for the purpose of higher density information to be recorded as taught by Kitmura (column 1, lines 51 – 52).

Allowable Subject Matter

6. Claims 28, 30, 32 , 33, 43 – 48, 52 – 54 are allowed.
7. The following is an examiner's statement of reasons for allowance: The prior art taken either singularly or in a combination fails to anticipate or fairly suggest the limitations of the independent claim, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails teach a combination of all the claimed features as presented in independent claims 28, 30, 32, 33, 43 – 46, and 52, an objective lens for use in an optical pick up apparatus having two lenses from object side to the image side, second lens located opposite to the first lens and a flange section provided around the periphery of the optically functional section and a concave portion made hollow toward the object side from a position where the fourth surface is located closest to the object is provided on the flange section provided around the periphery of the optically function section (claims 28); and the first contacting section has a first parallel to the optical axis and second contacting surface has a second parallel to surface to the optical axis and both parallel surface are brought in contact with each

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other so that relatively positioning in the direction perpendicular to the optical axis between the first lens and the second lens is determined (30); and second image side – flat surface is provided in a direction perpendicular to the optical axis at the image side on the flange section outer more than the optically functional section of the second lens (claim 32); and the first contacting section has a first slope surface slanted to the optical axis and the second contacting section has a second slope surface slanted to the optical axis and the first slope surface and the second slope surface are brought in contact with each other so that relatively positioning in the optical axis direction and in the direction perpendicular to the optical axis between the first lens and the second lens is determined (claim 33) ; and the flange section of the first lens and the flange section of the second lens are applied with an adhesive and a portion on the fitted section is not applied with an adhesive (claim 43); and at least one of the first lens and the second lens has a water vapor transmission ratio $1 \text{ g / m}^2 \cdot 24 \text{ h}$ to 60 g / m^2 and first and the second lens has the coefficient of the water absorption of the adhesive is .01 % to 2 % (claims 44 and 45); and an intermediate holding member hold the both lens and the both lens and the intermediate holding member are constructed in a single body and the intermediate holding member and the optically functional section of the second lens , out side of the objective lens (claims 46); and the second lens is shifted relatively to the first lens in a direction to the perpendicular to the optical axis in a clearance on a fitted section between the first and second lens and a variance in wave front aberration on an image forming point is less than a value defined diffraction limiting function (claim 52).

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8. Claims 4, 5, 9, 11, 18 - 26, 35 – 42, 50, and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to show the fourth surface is a flat surface, a concave portion made hollow toward the object side and the first contacting surface parallel to the optical axis and the second contacting surface has a second parallel surface to the optical axis and the first parallel surface and the second parallel surface are brought in contact with each other so that relatively positioning in the direction perpendicular to the optical axis between the first lens and the second lens is determined and a second image side – flat surface is provided in a direction is provided in a direction perpendicular to the optical axis at the image side on the flange section outer more than the optically functional section of the second lens, a gas flow passage to allow gas to flow between the first and second lens and outside object lens, flange section and the second lens is applied with an adhesive and a portion on the fitted section is not applied with the adhesive, at least one of the first lens and the second lens has a water vapor transmission ratio $1 \text{ g/m}^2 \cdot 24\text{h}$ to $60 \text{ g/m}^2 \cdot 24\text{h}$, first and the second lens has the coefficient of the water absorption of the adhesive .01% to 2% , a numerical aperture of the objective lens is .8 to .9 and the second contacting section is provided on the flange section and is fixed the first contacting section with an adhesive .

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10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The closest prior art

Ishikawa et al (6,574,056 B2) discloses, an eye cup moving mechanism of optical device.

Hunter (6,462,895 B2) discloses, an optical assembly mounting.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammed Hasan whose telephone number is (571) 272-2331. The examiner can normally be reached on M-TH, 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272- 2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Scott J. Sugarman
Primary Examiner